Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Persistence of beta-blocker treatment after a heart attack: percentage of members 18 years of age and older during the measurement year who were hospitalized and discharged from July 1 of the year prior to the measurement year to June 30 of the measurement year with a diagnosis of AMI and who received persistent beta-blocker treatment for six months after discharge.

Source(s)

National Committee for Quality Assurance (NCQA). HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 1, narrative. Washington (DC): National Committee for Quality Assurance (NCQA); 2015. various p.

National Committee for Quality Assurance (NCQA). HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 2, technical specifications for health plans. Washington (DC): National Committee for Quality Assurance (NCQA); 2015. various p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of members 18 years of age and older during the measurement year who were hospitalized and discharged from July 1 of the year prior to the measurement year to June 30 of the measurement year with a diagnosis of acute myocardial infarction (AMI) and who received persistent beta-blocker treatment for six months after discharge.

Rationale

According to results of large-scale clinical trials, beta-blockers consistently reduce subsequent coronary events, cardiovascular mortality, and all-cause mortality by 20 percent to 30 percent after an acute myocardial infarction (AMI) *when taken indefinitely* (Ryan et al., 1999; Phillips et al., 2000). Literature suggests that adherence to beta-blockers declines significantly within the first year (Krumholz et al., 1998; Norwegian Multicenter Study Group, 1994; Yusuf, Wittes, & Friedman, 1988).

About half of AMI survivors who are eligible for beta-blocker therapy do not receive it. Test data reveal significant underutilization of beta-blockers 180 days post-myocardial infarction (MI). There is evidence suggesting that around 2,900 to 5,000 lives are lost in the United States in the first year following AMI, from under-prescribing of beta-blockers (Bradford, Chen, & Krumholz, 1999).

In 2004, the American College of Cardiology (ACC)/American Heart Association (AHA) updated the *Guidelines for the Management of Patients with Acute Myocardial Infarction* and indicated that long-term beta-blocker therapy should begin as early as possible after the event for all patients without a contraindication to beta-blockers and continue indefinitely (ACC, 2004).

Evidence for Rationale

American College of Cardiology (ACC). Updated practice guidelines (Web version). [internet]. 2004.

Bradford WD, Chen J, Krumholz HM. Under-utilisation of beta-blockers after acute myocardial infarction. Pharmacoeconomic implications. Pharmacoeconomics. 1999 Mar;15(3):257-68. [34 references] PubMed

Krumholz HM, Radford MJ, Wang Y, Chen J, Heiat A, Marciniak TA. National use and effectiveness of beta-blockers for the treatment of elderly patients after acute myocardial infarction: National Cooperative Cardiovascular Project. JAMA. 1998 Aug 19;280(7):623-9. PubMed

National Committee for Quality Assurance (NCQA). HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 1, narrative. Washington (DC): National Committee for Quality Assurance (NCQA); 2015. various p.

Norwegian Multicenter Study Group. Timolol-induced reduction in mortality and reinfarction in patients with acute myocardial infarction 1988-1992. J Am Coll Cardiol. 1994;23:1023-30.

Phillips KA, Shlipak MG, Coxson P, Heidenreich PA, Hunink MG, Goldman PA, Williams LW, Weinstein MC, Goldman L. Health and economic benefits of increased beta-blocker use following myocardial infarction. JAMA. 2000 Dec 6;284(21):2748-54. PubMed

Ryan TJ, Antman EM, Brooks NH, Califf RM, Hillis LD, Hiratzka LF, Rapaport E, Riegel B, Russell RO, Smith EE III, Weaver WD. 1999 update: ACC/AHA guidelines for the management of patients with acute myocardial infarction. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol. 1999 Sep;34(3):890-911. [849 references] PubMed

Yusuf S, Wittes J, Friedman L. Overview of results of randomized clinical trials in heart disease. I. Treatments following myocardial infarction. JAMA. 1988 Oct 14;260(14):2088-93. PubMed

Primary Health Components

Acute myocardial infarction (AMI); beta-blockers

Denominator Description

Members age 18 years and older as of December 31 of the measurement year who had an acute inpatient discharge with any diagnosis of acute myocardial infarction (AMI) from July 1 of the year prior to the measurement year through June 30 of the measurement year (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

A 180-day course of treatment with beta-blockers (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

- Every 34 seconds, someone in the United States has a heart attack (Go et al., 2014). A heart attack, or myocardial infarction, occurs when blood flow to part of the heart is greatly reduced or stops completely (American Heart Association [AHA], 2012).
- Heart attacks kill an average of one person about every 90 seconds (Go et al., 2014).
- High blood pressure, high cholesterol and smoking can lead to heart disease and heart attack. Nearly half of American adults have one or more of these risk factors (Centers for Disease Control and Prevention, 2011).
- Each year more than 700,000 people have a heart attack. More than 30 percent have had a previous heart attack (Go et al., 2014).
- Decades of research show that starting a beta-blocker within days to weeks after a heart attack can reduce death and heart attack by 20 to 30 percent (Yusuf et al., 1985).
- Clinical guidelines recommend taking a beta-blocker after a heart attack to prevent another heart attack from occurring (Yancy et al., 2013). Beta-blockers work by lowering the heart rate, which reduces the amount of force on the heart and blood vessels (AHA, 2013). Persistent use of a beta-blocker after a heart attack can improve survival and heart disease outcomes.

Evidence for Additional Information Supporting Need for the Measure

American Heart Association (AHA). About heart attacks. [internet]. Dallas (TX): American Heart Association (AHA); 2012 [accessed 2014 Jun 09].

American Heart Association (AHA). How do beta blocker drugs affect exercise?. [internet]. Dallas (TX): American Heart Association (AHA); 2013 [accessed 2014 Jun 09].

Centers for Disease Control and Prevention (CDC). Million hearts: strategies to reduce the prevalence of leading cardiovascular disease risk factors--United States, 2011. MMWR Morb Mortal Wkly Rep. 2011 Sep 16;60(36):1248-51. PubMed

Go AS, Mozaffarian D, Roger VL, Benjamin EJ, Berry JD, Blaha MJ, Dai S, Ford ES, Fox CS, Franco S, Fullerton HJ, Gillespie C, Hailpern SM, Heit JA, Howard VJ, Huffman MD, Judd SE, Kissela BM, Kittner SJ, Lackland DT, Lichtman JH, Lisabeth LD, Mackey RH, Magid DJ, Marcus GM, Marelli A, Matchar DB, McGuire DK, Mohler ER, Moy CS, Mussolino ME, Neumar RW, Nichol G, Pandey DK, Paynter NP, Reeves MJ, Sorlie PD, Stein J, Towfighi A, Turan TN, Virani SS, Wong ND, Woo D, Turner MB, American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics--2014 update: a report from the American Heart Association. Circulation. 2014 Jan 21;129(3):e28-292. PubMed

National Committee for Quality Assurance (NCQA). The state of health care quality 2015. Washington (DC): National Committee for Quality Assurance (NCQA); 2015. 205 p.

Yancy CW, Jessup M, Bozkurt B, Butler J, Casey DE, Drazner MH, Fonarow GC, Geraci SA, Horwich T, Januzzi JL, Johnson MR, Kasper EK, Levy WC, Masoudi FA, McBride PE, McMurray JJ, Mitchell JE, Peterson PN, Riegel B, Sam F, Stevenson LW, Tang WH, Tsai EJ, Wilkoff BL. 2013 ACCF/AHA guideline for the management of heart failure: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. Circulation. 2013 Oct 15;128(16):e240-327. PubMed

Yusuf S, Peto R, Lewis J, Collins R, Sleight P. Beta blockade during and after myocardial infarction: an overview of the randomized trials. Prog Cardiovasc Dis. 1985 Mar-Apr;27(5):335-71. PubMed

Extent of Measure Testing

All HEDIS measures undergo systematic assessment of face validity with review by measurement advisory panels, expert panels, a formal public comment process and approval by the National Committee for Quality Assurance's (NCQA's) Committee on Performance Measurement and Board of Directors. Where applicable, measures also are assessed for construct validity using the Pearson correlation test. All measures undergo formal reliability testing of the performance measure score using beta-binomial statistical analysis.

Evidence for Extent of Measure Testing

Rehm B. (Assistant Vice President, Performance Measurement, National Committee for Quality Assurance, Washington, DC). Personal communication. 2015 Mar 16. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Measurement Setting

Hospital Inpatient

Managed Care Plans

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age 18 years and older

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

July 1 of the year prior to the measurement year through June 30 of the measurement year

Denominator Sampling Frame

Enrollees or beneficiaries

Denominator (Index) Event or Characteristic

Clinical Condition

Institutionalization

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Members age 18 years and older as of December 31 of the measurement year who had an acute inpatient discharge with any diagnosis of acute myocardial infarction (AMI) (AMI Value Set) from July 1 of the year prior to the measurement year through June 30 of the measurement year.

To identify an acute inpatient discharge:

Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set)
Exclude nonacute inpatient stays (Nonacute Inpatient Stay Value Set)
Identify the discharge date for the stay

Use only facility claims to identify discharges and diagnoses for denominator events (including readmissions or direct transfers). Do not use professional claims.

Transfers to an Acute Inpatient Care Setting. Include hospitalizations in which the member was transferred directly to another acute inpatient care setting for any diagnosis. Count the discharge from the subsequent acute inpatient stay, not the initial discharge. The discharge date from the subsequent acute inpatient stay must occur on or before June 30 of the measurement year. Organizations must identify "transfers" using their own methods and then confirm the acute inpatient care setting. To confirm the acute inpatient care setting:

Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set)
Exclude nonacute inpatient stays (Nonacute Inpatient Stay Value Set)

Note:

Members must have been continuously enrolled on the discharge date through 179 days after discharge.
Allowable Gap: No more than one gap in enrollment of up to 45 days within 180 days of the event. To determine continuous enrollment for a Medicaid beneficiary for whom enrollment is verified monthly, the member may not have more than a 1-month gap in coverage.

Exclusions

Transfers to a Nonacute Inpatient Care Setting: Exclude from the denominator hospitalizations in

which the member was transferred directly to a nonacute inpatient care setting for any diagnosis. Organizations must identify "transfers" using their own methods and then confirm the nonacute inpatient setting. To confirm the nonacute inpatient setting:

Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set)

Confirm the stay was for nonacute inpatient care based on the presence of a nonacute code (Nonacute Inpatient Stay Value Set) on the claim

If a member has more than one episode of AMI from July 1 of the year prior to the measurement year through June 30 of the measurement year that meets the event/diagnosis criteria, only include the first discharge.

Members identified as having an intolerance or allergy to beta-blocker therapy. Any of the following anytime during the member's history through the end of the continuous enrollment period meet criteria (*Optional*):

Asthma (Asthma Value Set)

Chronic obstructive pulmonary disease (COPD) (COPD Value Set)

Obstructive chronic bronchitis (Obstructive Chronic Bronchitis Value Set)

Chronic respiratory conditions due to fumes and vapors (Chronic Respiratory Conditions Due to Fumes/Vapors Value Set)

Hypotension, heart block greater than 1 degree or sinus bradycardia (Beta-Blocker Contraindications Value Set)

A medication dispensing event indicative of a history of asthma (refer to Table PBH-D in the original measure documentation for medications to identify exclusions)

Intolerance or allergy to beta-blocker therapy

Value Set Information

Measure specifications reference value sets that must be used for HEDIS reporting. A value set is the complete set of codes used to identify the service(s) or condition(s) included in the measure. Refer to the NCQA Web site to purchase HEDIS Volume 2, which includes the Value Set Directory.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

A 180-day course of treatment with beta-blockers (refer to Table PBH-B in the original measure documentation for a list of beta-blocker medications)

Identify all members in the denominator population whose dispensed days supply is greater than or equal to 135 days in the 180-day measurement interval. Persistence of treatment for this measure is defined as at least 75 percent of the days supply filled.

To determine continuity of treatment during the 180-day period, identify all prescriptions filled within 180-day measurement interval, and add the number of allowed gap days to the number of treatment days for a maximum of 180 days (i.e., 135 treatment days + 45 gap days = 180 days).

To account for members who are on beta-blockers prior to admission, factor those prescriptions into adherence rates if the actual treatment days fall within the 180-day measurement interval.

Exclusions

Unspecified

Value Set Information

Measure specifications reference value sets that must be used for HEDIS reporting. A value set is the

complete set of codes used to identify the service(s) or condition(s) included in the measure. Refer to the NCQA Web site to purchase HEDIS Volume 2, which includes the Value Set Directory.

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Pharmacy data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Description of Allowance for Patient or Population Factors

This measure requires that separate rates be reported for commercial, Medicaid, and Medicare product lines.

Standard of Comparison

not defined yet

Identifying Information

Original Title

Persistence of beta-blocker treatment after a heart attack (PBH).

Measure Collection Name

HEDIS 2016: Health Plan Collection

Measure Set Name

Effectiveness of Care

Measure Subset Name

Cardiovascular Conditions

Submitter

National Committee for Quality Assurance - Health Care Accreditation Organization

Developer

National Committee for Quality Assurance - Health Care Accreditation Organization

Funding Source(s)

Unspecified

Composition of the Group that Developed the Measure

National Committee for Quality Assurance's (NCQA's) Measurement Advisory Panels (MAPs) are composed of clinical and research experts with an understanding of quality performance measurement in the particular clinical content areas.

Financial Disclosures/Other Potential Conflicts of Interest

In order to fulfill National Committee for Quality Assurance's (NCQA's) mission and vision of improving health care quality through measurement, transparency and accountability, all participants in NCQA's expert panels are required to disclose potential conflicts of interest prior to their participation. The goal of this Conflict Policy is to ensure that decisions which impact development of NCQA's products and services are made as objectively as possible, without improper bias or influence.

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2013 Apr 3

Core Quality Measures

Accountable Care Organizations (ACOs), Patient Centered Medical Homes (PCMH), and Primary Care

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Oct

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates previous versions:

National Committee for Quality Assurance (NCQA). HEDIS 2015: Healthcare Effectiveness Data and Information Set. Vol. 1, narrative. Washington (DC): National Committee for Quality Assurance (NCQA); 2014. various p.
National Committee for Quality Assurance (NCQA). HEDIS 2015: Healthcare Effectiveness Data and Information Set. Vol. 2, technical specifications for health plans. Washington (DC): National Committee for Quality Assurance (NCQA); 2014. various p.

Measure Availability

Source available for purchase from the National Committee for Quality Measurement (NCQA) Web site .

For more information, contact NCQA at 1100 13th Street, NW, Suite 1000, Washington, DC 20005; Phone: 202-955-3500; Fax: 202-955-3599; Web site: www.ncqa.org .

Companion Documents

The following are available:

National Committee for Quality Assurance (NCQA). The state of health care quality 2015. Washington (DC): National Committee for Quality Assurance (NCQA); 2015 Oct. 205 p.
National Committee for Quality Assurance (NCQA). HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 2, technical update. Washington (DC): National Committee for Quality Assurance (NCQA); 2015 Oct 1. 12 p.

For more information, contact the National Committee for Quality Assurance (NCQA) at 1100 13th Street, NW, Suite 1000, Washington, DC 20005; Phone: 202-955-3500; Fax: 202-955-3599; Web site: www.ncqa.org .

NQMC Status

This NQMC summary was completed by ECRI on June 16, 2006. The information was not verified by the measure developer.

This NQMC summary was updated by ECRI Institute on February 19, 2008. The information was verified by the measure developer on April 24, 2008.

This NQMC summary was updated by ECRI Institute on March 10, 2009. The information was verified by the measure developer on May 29, 2009.

This NQMC summary was updated by ECRI Institute on January 22, 2010 and on February 16, 2011.

This NQMC summary was retrofitted into the new template on June 29, 2011.

This NQMC summary was updated by ECRI Institute on May 16, 2012, April 1, 2013, January 10, 2014, December 30, 2014, and again on January 11, 2016.

Copyright Statement

Production

Source(s)

National Committee for Quality Assurance (NCQA). HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 1, narrative. Washington (DC): National Committee for Quality Assurance (NCQA); 2015. various p.

National Committee for Quality Assurance (NCQA). HEDIS 2016: Healthcare Effectiveness Data and Information Set. Vol. 2, technical specifications for health plans. Washington (DC): National Committee for Quality Assurance (NCQA); 2015. various p.

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